

PATENT ABSTRACTS OF JAPAN

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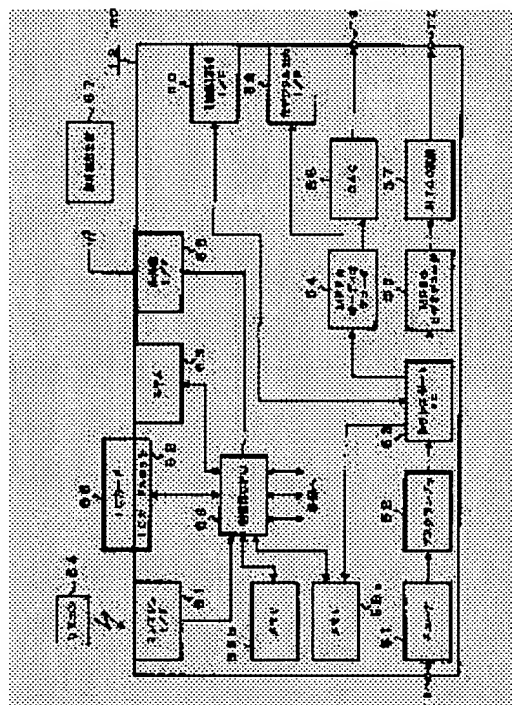
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NAGANO SUSUMU

(54) DATA RECEIVING RECORDING METHOD AND DATA RECEIVER

(57)Abstract:

PROBLEM TO BE SOLVED: To properly perform recording processing to distributed data with copyright.

SOLUTION: The receiver is provided with a reception means 51 that receives distributed data on which copyright information is multiplexed a discrimination means 58 that discriminates the copyright information received by the reception means 51, and a transmission means 60 that transmits the data received by the reception means 51 to a prescribed recorder and transmits the copyright information discriminated by the discrimination means 58 to the recorder as information ancillary to the data. By the data reception recording method, the copyright information is recorded on a recording medium together with the data, and copy protect processing of the received data recorded on the recording medium effectively functions based on the copyright information stored in a prescribed area.



LEGAL STATUS

[Date of request for examination]

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the block diagram showing the example of a configuration of the whole system by the gestalt of 1 operation of this invention.

[Drawing 2] It is the explanatory view showing the example of the receiving screen by the gestalt of 1 operation of this invention.

[Drawing 3] It is the block diagram showing the example of a configuration of the sending area of the data based on the gestalt of 1 operation of this invention.

[Drawing 4] It is the explanatory view showing the example of transmission data by the gestalt of 1 operation of this invention.

[Drawing 5] It is the explanatory view showing the example of the transmission condition by the gestalt of 1 operation of this invention.

[Drawing 6] It is the explanatory view showing the example of the packet structure by the gestalt of 1 operation of this invention.

[Drawing 7] It is the explanatory view showing the transmission concept of the MHEG data based on the gestalt of 1 operation of this invention.

[Drawing 8] It is the block diagram showing the example of connection by the gestalt of 1 operation of this invention.

[Drawing 9] It is the block diagram showing the example of a configuration of IRD by the gestalt of 1 operation of this invention.

[Drawing 10] It is the block diagram showing the example of a configuration of demulti BUREKUSA by the gestalt of 1 operation of this invention.

[Drawing 11] It is the block diagram showing the example of a configuration of the recording apparatus by the gestalt of 1 operation of this invention.

[Drawing 12] It is the explanatory view showing the example of the data-logging condition to the disk by the gestalt of 1 operation of this invention.

[Drawing 13] It is the flow chart which shows the example of download processing of the predetermined channel by the gestalt of 1 operation of this invention.

[Drawing 14] It is the flow chart which shows the example of download processing of the copyright information by the gestalt of 1 operation of this invention.

[Description of Notations]

3 [-- The disk record regenerative apparatus corresponding to IEEE1394, 14 / -- A television receiver, 58 / -- CPU for control, 58a, 58b / -- 60 Working-level month memory, 71 / -- 61 An IEEE1394 interface, 79a / -- A man machine interface, 66 / -- An infrared signal interface, 67 / -- An infrared signal output part, 80 / -- Demultiplexer] -- A reception facility, 12 -- IRD, 13 -- A storage device, 13A

[Translation done.]

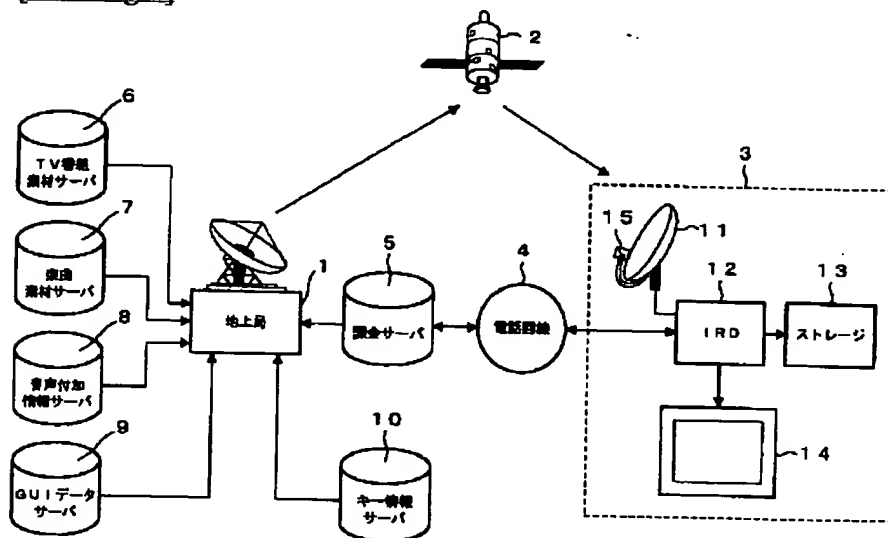
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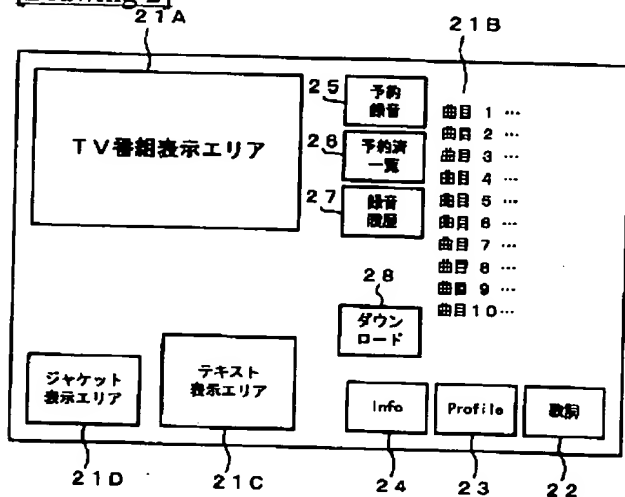
DRAWINGS

[Drawing 1]



システム全体構成例

[Drawing 2]



GUIによる表示例

[Drawing 8]

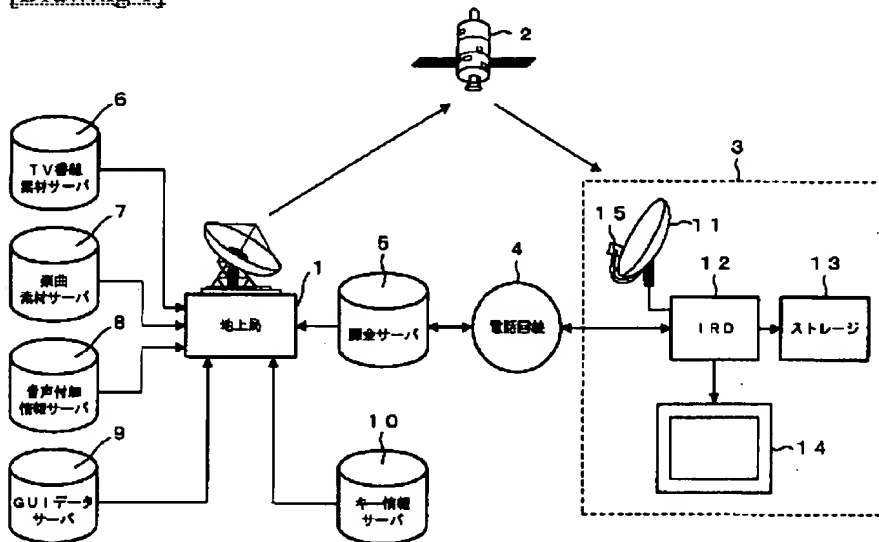
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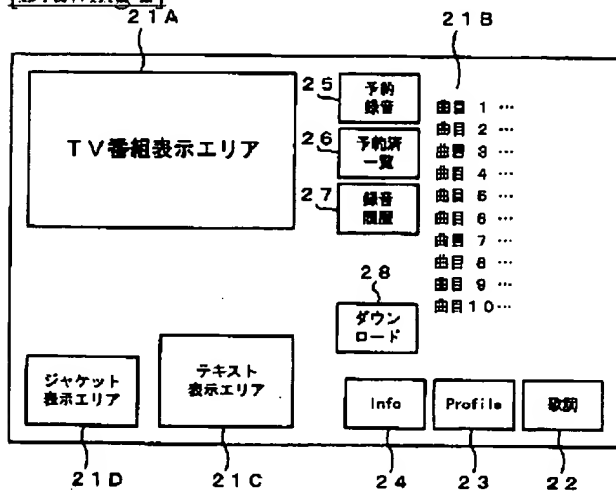
DRAWINGS

[Drawing 1]



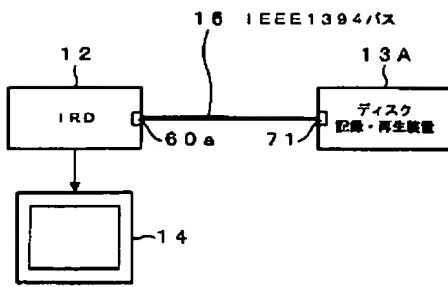
システム全体構成例

[Drawing 2]



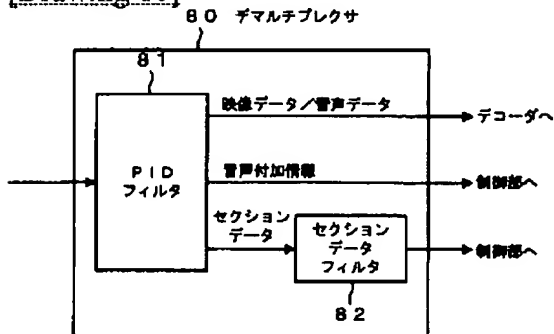
GUIによる表示例

[Drawing 8]

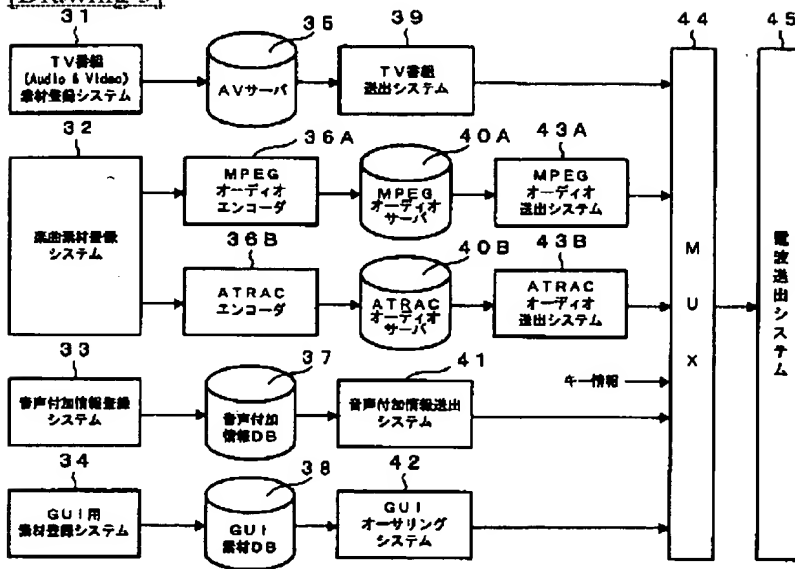


IEEE1394に対応したストレージを接続した例

[Drawing 10]

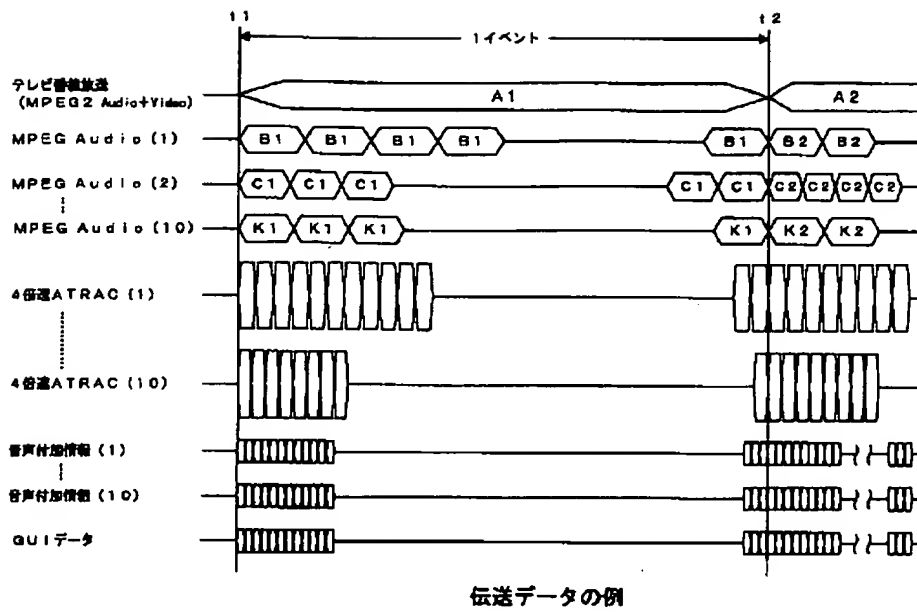


[Drawing 3]



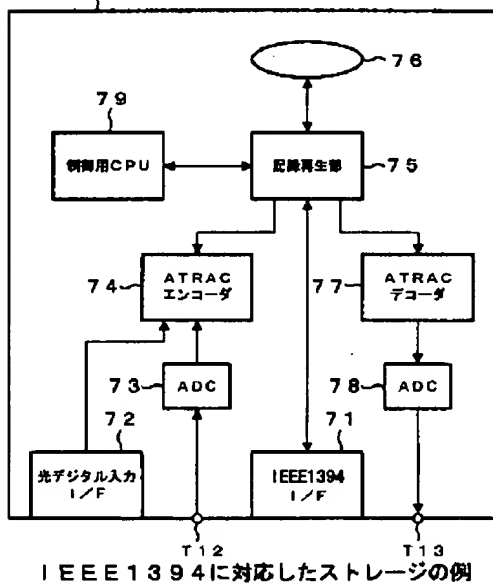
送出側の構成例

[Drawing 4]

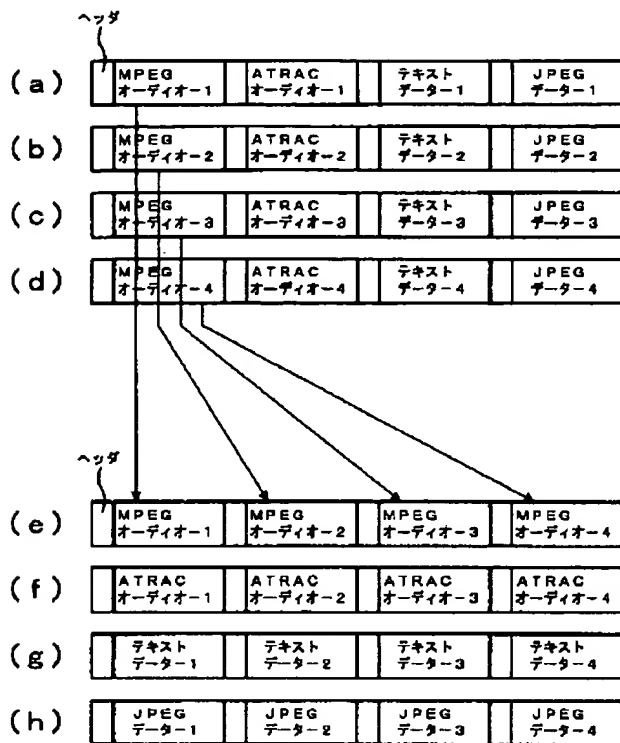


[Drawing 11]

13A IEEE1394対応記録・再生装置

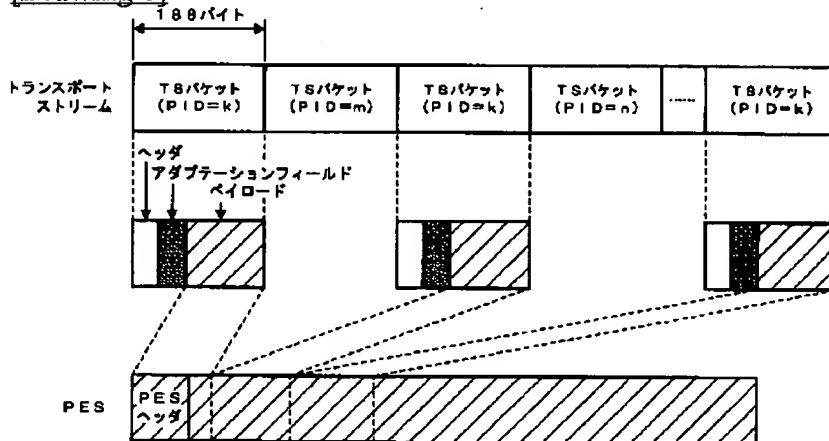


[Drawing 5]



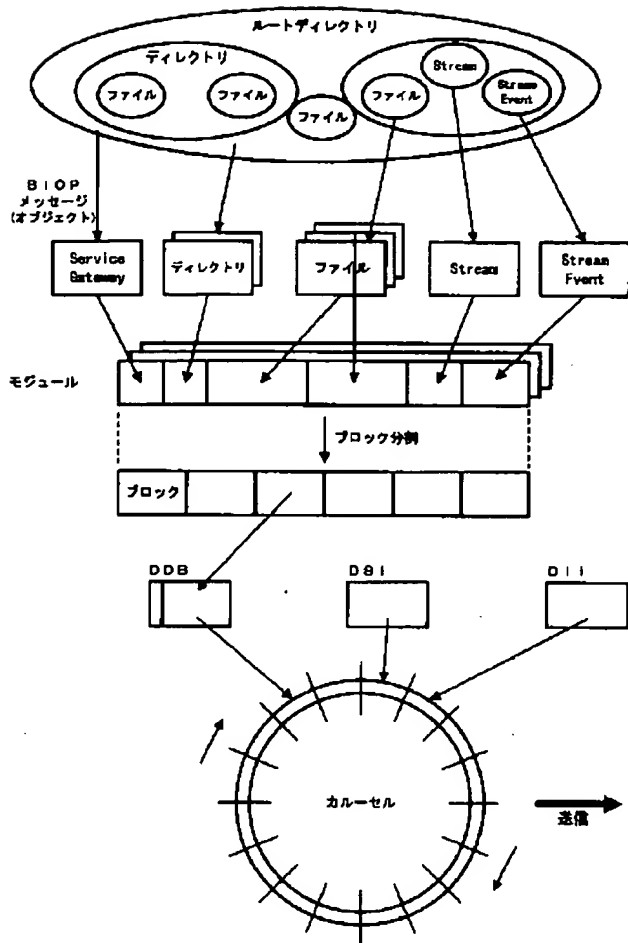
伝送状態の例

[Drawing 6]



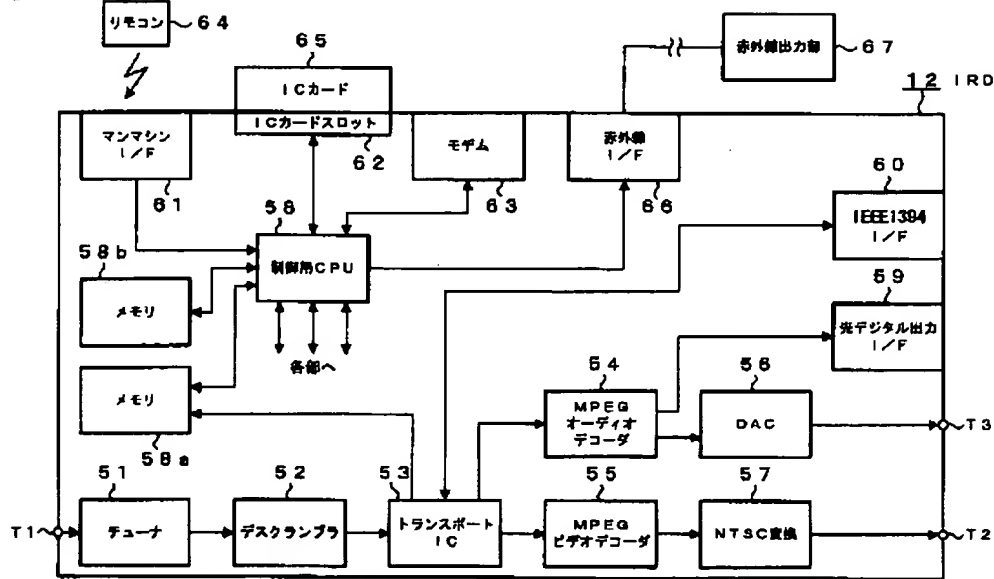
パケット構造

[Drawing 7]



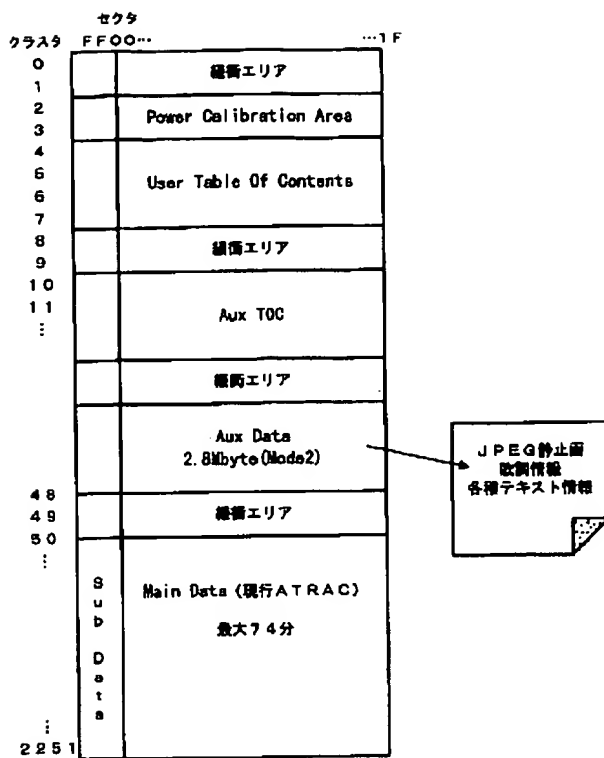
MHEGデータの伝送概念

[Drawing 9]



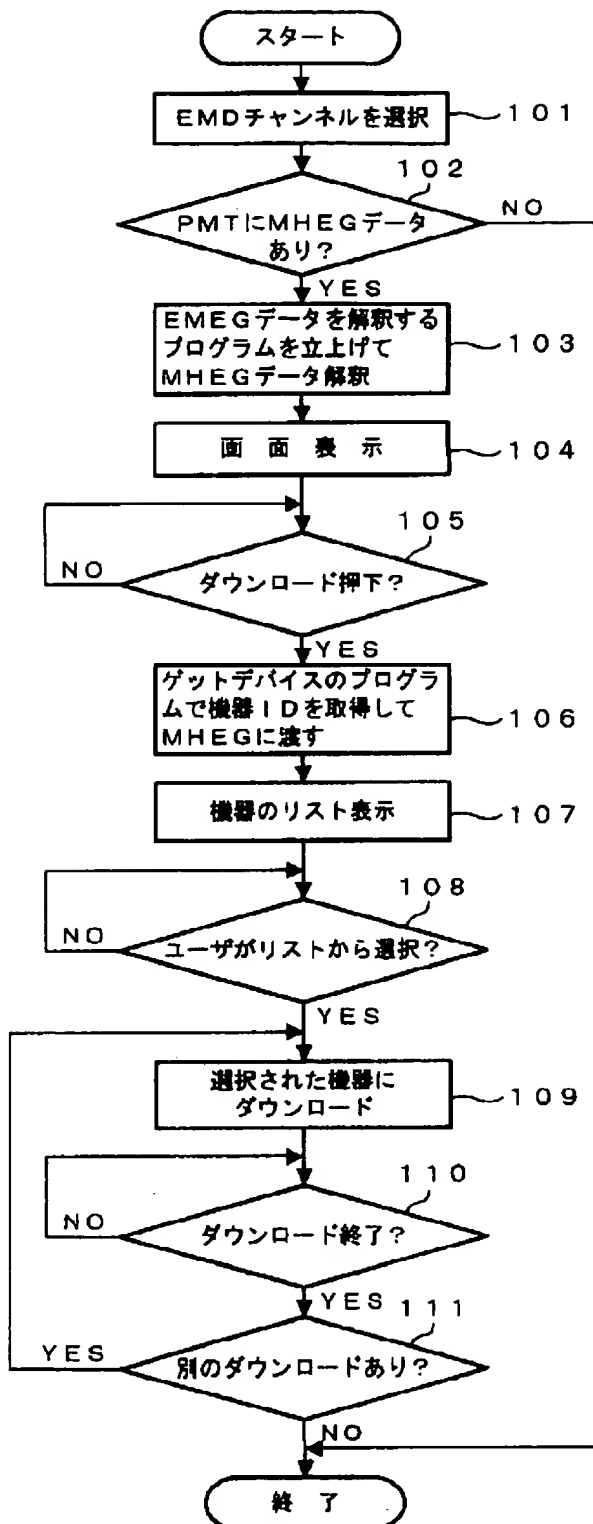
IRDの構成例

[Drawing 12]



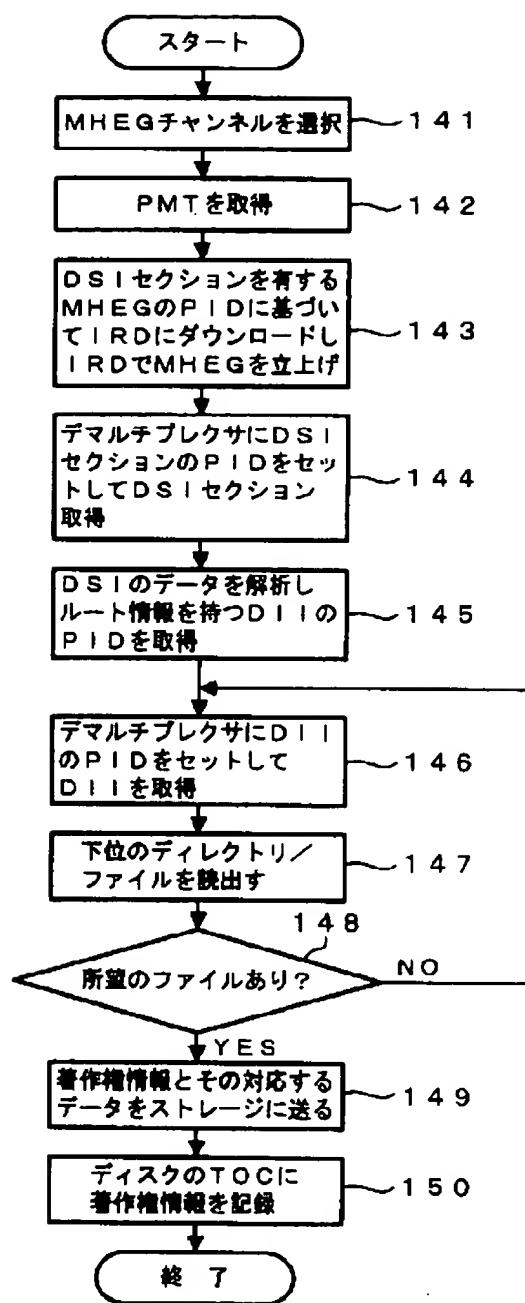
ディスクへのデータ記録状態の例

[Drawing 13]



ダウンロード処理

[Drawing 14]



著作権情報のダウンロード処理

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention receives digital satellite broadcasting, applies it to the processing which makes a recording apparatus download the received music program, and relates to the suitable data reception / record approach and a suitable data sink.

[0002]

[Description of the Prior Art] The spread of digital satellite broadcasting is progressing. Compared with the existing analog broadcasting, digital satellite broadcasting is strong to a noise or phasing, and can transmit the signal of high quality. Moreover, frequency use effectiveness improves and many channelization can be attained. For example, in digital satellite broadcasting, it is possible to secure hundreds of channels in one satellite. In such digital satellite broadcasting, many special channels, such as a sport, a movie, music, and news, are prepared, and the program of the contents of each dedication is broadcast in these cleared channels.

[0003] In these cleared channels, a music channel is one of the popular channels, and the program for promotions which mainly performs introduction of a new song or a hit song etc. is broadcast.

[0004] As mentioned above, in the conventional music channel, the program of new song introduction or a hit song is sent with an animation and voice. It may be thought that he wants to purchase and enjoy CD of the musical piece currently introduced etc. if a viewer has the musical piece which is looking at such a music channel and was pleasing. Moreover, I want to come to get to know the information of the artist of the musical piece, and the information on an album that the musical piece is stored. It is very convenient if there is a musical piece which the music program was watched, the information was acquired on that spot when he wanted to come to get to know the information on an album that the information of the artist of the musical piece and its musical piece are stored, and was pleasing, and the audio data of the musical piece are downloadable. However, by the conventional music channel, on the other hand, the animation and voice about a musical piece are not sent to a target, and cannot respond to such a request.

[0005] Then, in order to solve such a trouble, while being able to acquire easily the information about the music currently broadcast by the music channel, the music content distribution system which enabled it to download the musical piece data to data accumulation equipment simply is proposed (Heisei 9 patent application No. 308488). Moreover, in such a music content distribution system, the thing which enabled it to also download the words data and jacket data (still picture data) with musical piece data is proposed.

[0006]

[Problem(s) to be Solved by the Invention] By the way, to construct such a music content distribution system, the processing which makes a recording apparatus download the music program which connected the tuner which receives digital satellite broadcasting to the data accumulation equipment (recording apparatus) which used storages, such as a magneto-optic disk, and was received with the tuner is required of the user side who receives digital satellite broadcasting. Here, the data with which

the musical piece data distributed from a transmission place by such distribution system have copyright are most. Therefore, when it seems that the musical piece data downloaded to the recording apparatus by the user side may be reproduced without any restriction, it becomes difficult to keep copyright and there is a possibility that the music content distribution system itself may no longer be utilized effectively. [0007] Moreover, those who manufactured each have copyright for each individual also about the alphabetic data of words and the still picture data of the image of a jacket attached to the musical piece data which constitute a music program, and copyright processing may be needed apart from musical piece data.

[0008] The purpose of this invention is to enable it to perform record processing of data with the distributed copyright proper.

[0009]

[Means for Solving the Problem] In case the data reception / record approach of this invention receives the data encoded by the predetermined method, and the copyright information incidental to this data and makes the received data record on a predetermined record medium, it records copyright information on the predetermined area of a record medium.

[0010] According to the data reception / record approach of this invention, copyright information is recorded on a record medium with data.

[0011] Moreover, the data sink of this invention is equipped with a transmission means transmit the copyright information which distinguished with the distinction means to a recording apparatus as information which accompanies data while it transmits the data which received with a receiving means receive the data with which copyright information is multiplexed and distributed, a distinction means distinguish the copyright information received with the receiving means, and a receiving means to a predetermined recording apparatus.

[0012] According to the data sink of this invention, copyright information is transmitted to a recording apparatus with data, and it becomes possible to record copyright information with data by the recording apparatus side.

[0013]

[Embodiment of the Invention] Hereafter, the gestalt of 1 operation of this invention is explained with reference to an accompanying drawing.

[0014] While the system by which this invention was applied broadcasts a music program using digital satellite broadcasting, when there is a musical piece by which the viewer enabled it to view and listen to a music program, viewed and listened further, and was pleased by distributing the audio data relevant to this music program, it enables it to purchase that musical piece simply on that spot.

[0015] Drawing 1 shows the whole music content distribution system configuration to which this invention was applied. As shown in this drawing, the material of the TV program broadcast from the TV program material server 6, the material of the musical piece data from the musical piece material server 7, the voice additional information from the voice additional information server 8, and the GUI data from the GUI (Graphical User Interface: graphical user interface) data server 9 are sent to the earth station 1 of digital satellite broadcasting.

[0016] The TV program server 6 is a server which offers the material of the usual music program. The materials of music broadcast sent from this TV program material server 6 are an animation and voice, in the usual music program, the animation and voice for promotions of new song introduction are broadcast, or a count-down of the newest hit song is broadcast, for example.

[0017] The musical piece material server 7 is a server which uses an audio channel and sponsors an audio program. The material of this audio program is only voice. This musical piece material server 7 sends the material of the audio program of two or more audio channels to an earth station 1. In program broadcast of each audio channel, predetermined is broadcast for the same musical piece [unit time], respectively. Each audio channel has been independent, respectively and the usage can consider various kinds of things. For example, by one audio channel, the recommendation music in the pop of the newest Japan may be predetermined-time-repeated, and may be broadcast, and by other audio channels, the recommendation music in the newest American pop is predetermined-time-repeated, and is broadcast,

and out of jazz, recommendation music may be predetermined-time-repeated and may be broadcast by the audio channel of further others. Moreover, two or more musical pieces of the same artist may be divided into each audio channel, and may be broadcast repeatedly.

[0018] The voice additional information server 8 offers attached information, such as a hour entry of the musical piece outputted from the musical piece material server 7. It is made to have provided about the copyright information for every music, i.e., the information about a limit of a digital copy, here.

[0019] The GUI data server 9 offers the data for forming GUI screens, such as data for forming the data for forming the screen of the list page of a musical piece, or the information page of each musical piece distributed, and the still picture data of a jacket, and a screen for EPG (Electric Program Guide), etc. In the system to which this example is applied, words of a musical piece, an artist's concert information, etc. which are distributed can be displayed on a screen by actuation of GUI on a screen so that it may explain for details later. Moreover, actuation of GUI on a screen can perform selection of a musical piece, download, its reservation, etc. The data for it are sent from the GUI data server 9. In addition, as GUI data of this example, it has considered as the data of the format defined, for example by the MHEG (Multimedia and HypermediaInformation Coding Experts Group) method. Moreover, copyright information, i.e., the information about a limit of a digital copy, is given, and it is made to be sent for every data about the still picture data of a jacket, and the text data of words.

[0020] An earth station 1 multiplexes the video data and audio data used as the material of the music program broadcast from the TV program material server 6 which were mentioned above, the audio data used as the material of the audio channel from the musical piece material server 7, the voice additional information from a voice additional information server, and the GUI data from the GUI data server 9, and is transmitted. At this time, the video data of TV program broadcast is compressed for example, by MPEG(Moving Picture Experts Group) 2 method, and the audio data of TV program broadcast are compressed by the MPEG 2 audio method. The audio data of each audio channel are compressed by two different methods, for example, an MPEG 2 audio method, and the ATRAC (Adaptive Transform Acoustic Coding) method. Moreover, these data are enciphered using the key information from the key information server 10 in the case of multiplexing.

[0021] The signal from an earth station 1 is received by the reception facility 3 installed in each home through the satellite 2. Two or more transponders are carried in the satellite 2. One transponder has the transmission capacity of for example, 30Mbps(es). As reception facility 3 of each home, a parabolic antenna 11, IRD (Integrated Receiver Decoder)12, a storage device 13, and a television receiver 14 are prepared.

[0022] The signal sent through a satellite 2 with the parabolic antenna 11 is received. This input signal is changed into a frequency predetermined by LNB (Low Noise BlockDownconverter)15 attached in the parabolic antenna 11, and is supplied to IRD12.

[0023] IRD12 chooses the signal of a predetermined channel from an input signal, and performs the recovery of a video data and audio data. Moreover, IRD12 forms the list page of the musical piece distributed, the information page of each musical piece, and the screen for GUI. And the output of IRD12 is supplied to a television receiver 14.

[0024] A storage device 13 is for holding the downloaded audio data. For example, the DVD recorder / player which used the optical disk MD recorder / player which used the magneto-optic disk called MD (mini disc) as a record medium as a storage device 13, the DAT recorder / player which used the magnetic tape as a record medium, and for video record etc. as a record medium can be used. Moreover, it is also possible to save audio data at the hard disk and CD-R, using a personal computer as a storage device 13.

[0025] IRD12 is connected to the accounting server 5 through the telephone line 4. The IC card with which various information is memorized is inserted in IRD12. The information will be memorized by the IC card if download of the audio data of a musical piece is performed. The information on this IC card is sent to the accounting server 5 through the telephone line 4. The accounting server 5 performs suitable accounting from this download information, and asks a viewer for it. Thus, the copyright of a musical piece to download can be protected by performing suitable accounting.

[0026] Thus, in the system of this example, the earth station 1 multiplexed the video data and audio data used as the material of the music program broadcast from the TV program material server 6, the audio data used as the material of the audio channel from the musical piece material server 7, the voice additional information data from the voice additional information server 8, and the GUI data from the GUI data server 9, and is transmitted. And if the reception facility 3 of each home receives this broadcast, a music program will be watched, and also a GUI screen is displayed based on the sent GUI data. If required actuation is performed looking at this GUI screen, the information page about each musical piece can be seen, and the audition about each musical piece can be performed. Furthermore, by performing required actuation, looking at a GUI screen, the audio data of a desired musical piece can be downloaded and it can memorize on the storage disk 13.

[0027] Next, the actuation of a viewer in the reception facility 3 installed in each home is further explained to a detail.

[0028] If the reception facility 3 of each home receives this broadcast, a screen as shown in a television receiver 14 at drawing 2 will be displayed. The dynamic image based on the music program sponsored from the TV program material server 6 is displayed on TV program display area 21A of the upper left section of a screen. List 21B of the musical piece of each channel currently broadcast by the audio channel is displayed on the top-right-of-the-screen section. Moreover, text display area 21C and jacket display area 21D are set to the lower left of a screen. Furthermore, the words display carbon button 22, the profile display carbon button 23, the information-display carbon button 24, the reservation sound recording carbon button 25, the reserved list display carbon button 26, the sound recording hysteresis display carbon button 27, and the download carbon button 28 are displayed on the right-hand side of a screen.

[0029] The viewer looks for the interested musical piece, looking at the musical piece name currently displayed on this list 21B. And if an interested musical piece is found, after operating the arrow key of a remote commander and doubling cursor with the musical piece, the enter key of the remote commander attached to IRD12 is pushed. The musical piece which doubled cursor can be listened to by this. That is, by each audio channel, among predetermined unit time amount, since the same musical piece is broadcast repeatedly, the screen of TV program display area 21A remains as it is, is switched to the audio channel of the musical piece, and can try listening the musical piece. At this time, the static image of MD jacket of that musical piece is displayed on jacket display area 21D.

[0030] this condition -- the words display carbon button 22 -- cursor -- doubling -- an enter key -- pushing (it being said that a carbon button is pushed for actuation of doubling cursor with a carbon button and pushing an enter key hereafter) -- the words of a musical piece are expressed to text display area 21C as the timing which synchronized with audio data. Similarly, a push on the profile display carbon button 23 or the information-display carbon button 24 displays an artist's profile or concert information corresponding to a musical piece etc. on text display area 21C. Thus, a user can know what kind of musical piece is distributed now, and can know the detailed information about each musical piece.

[0031] The download carbon button 28 is pushed to purchase the musical piece which the user tried listening. If the download carbon button 28 is pushed, the audio data of the selected musical piece will download and a storage device 13 will memorize. With the audio data of a musical piece, the words data, an artist's profile information, the still picture data of a jacket, etc. are also downloadable. The information is memorized by the IC card in IRD12 whenever a musical piece downloads. the information memorized by the IC card -- for example, one month -- every [once] -- accounting -- a server -- it is sucked up by 5. The copyright of a musical piece to download can be protected by this.

[0032] Moreover, a viewer pushes the reservation sound recording carbon button 25 to reserve download beforehand. If this carbon button is pushed, a GUI screen will switch and the list of musical pieces which can be reserved will be displayed on the whole screen. This list can display the musical piece searched per one time basis, the one-week unit, and genre etc. A viewer's selection of the musical piece which wants to reserve download out of this list registers that information into IRD12. And it can be made to display on the whole screen by pushing the reserved list display carbon button 26 to check

the musical piece which already reserved download. Thus, if the reserved musical piece becomes reservation time of day, it will be downloaded by IRD12 and will be memorized by the storage device 13.

[0033] A viewer can display the list of musical pieces which already downloaded on the whole screen by pushing the sound recording hysteresis carbon button 27 to check about the musical piece which downloaded.

[0034] Thus, in the reception facility 3 of the system of this example, the list of musical pieces is displayed on the GUI screen of a television receiver 14. And if a musical piece is chosen according to the display on this GUI screen, it can try listening that musical piece and the words of that musical piece, an artist's profile, etc. can be known. Furthermore, the hysteresis of download of a musical piece, and the reservation and download, the display of a reserved musical piece list, etc. can be performed.

[0035] As mentioned above, in the music content distribution system to which this invention was applied, as explained, while a music program is distributed, the audio data of a musical piece are distributed using two or more audio channels. And a desired musical piece can be looked for using the list of musical pieces distributed, and the audio data can be saved easily [a storage device 13]. Hereafter, such a system is explained further in full detail.

[0036] Drawing 3 shows the configuration of the earth station 1 in the music content distribution system of this example.

[0037] In drawing 3, the material data from the TV program material registration system 31 are registered into the AV server 35. This material data is a video data and audio data. The data registered into the AV server 35 are sent to the TV program sending-out system 39, a video data is compressed for example, by the MPEG 2 method here, and audio data are compressed for example, by the MPEG 2 audio method, and are packet-ized. The output of the TV program sending-out system 39 is sent to a multiplexer 44.

[0038] Moreover, after the audio data from the musical piece material registration system 32 are supplied to MPEG 2 audio encoder 36A and ATRAC encoder 36B and are encoded respectively, they are registered into MPEG audio server 40A and ATRAC audio server 40B. After the MPEG audio data registered into MPEG audio server 40A are sent to MPEG audio sending-out system 43A and are packet-ized here, they are sent to a multiplexer 44. After the ATRAC data registered into ATRAC audio server 40B are sent to ATRAC audio sending-out system 43B as 4X ATRAC data and are packet-ized here, they are sent to a multiplexer 44.

[0039] Furthermore, the voice additional information from the voice additional information registration system 33 is registered into the voice additional information database 37. After the voice additional information registered into the voice additional information database 37 is sent to the voice additional information sending-out system 41 and is packet-ized here, it is sent to a multiplexer 44.

[0040] Moreover, the GUI data from the material registration system 34 for GUI are registered into the GUI material database 38. The GUI material data registered into the GUI material database 38 are sent to the GUI authoring system 42, and after the data of the screen for GUI are processed and being packet-ized here, they are sent to a multiplexer 44. Here, although the still picture information on a jacket, the words information on a musical piece, an artist's concert information, etc. are included in GUI material data, 640x480 pixels and words information that still picture information was compressed for example, by the JPEG (JointPhotographic Experts Group) method are made into the text data of less than 800 characters, and are packet-ized, respectively.

[0041] In a multiplexer 44, while time-axis multiplexing of the video packet from the TV program sending-out system 39 and an audio packet, the audio packet from MPEG audio sending-out system 43A, the 4X audio packet from ATRAC audio sending-out system 43B, the voice additional information packet from the voice additional information sending-out system 41, and the GUI data packet from the GUI authoring system 42 is carried out, it is enciphered using the key information from the key information server 10 (drawing 1).

[0042] The output of a multiplexer 44 is transmitted towards a satellite 2 from an antenna, after being sent to the electric-wave sending-out system 45 and processing addition of an error correcting code,

modulation, frequency conversion, etc. here.

[0043] Drawing 4 shows an example of the data transmitted from an earth station 1. In addition, time-axis multiplexing of each data shown in this drawing is carried out in fact. As shown in drawing 4, during time of day t1 to the time of day t2 is made into one event, and let it be the following event from time of day t2. An event is a unit which changes the lineup of a musical piece, and, usually 30 minutes or 1 hour is made into a unit. For example, it is possible to broadcast the 11th place in a previous event from the 20th place of the top 20 of the newest hit song, and to broadcast the 1st place in a next event from the 10th place etc.

[0044] As shown in drawing 4, in the event of time of day t1 to the time of day t2, the music program which has the predetermined contents A1 is broadcast by program broadcast of the usual animation. Moreover, in the event which begins from time of day t2, the music program which has the predetermined contents A2 is broadcast. An animation and voice are broadcast in this usual music program.

[0045] As for an audio channel, CH10 is prepared by ten channels from a channel CH1. At this time, the same musical piece is repeatedly transmitted between one event by each audio channels CH1, CH2, and CH3 and ...CH10. That is, in the event of time of day t1 to the time of day t2, by the audio channel CH1, a musical piece B1 is transmitted repeatedly, by the audio channel CH2, a musical piece C1 is transmitted repeatedly, and a musical piece K1 is hereafter transmitted repeatedly by the audio channel CH10 similarly. In the event which begins from time of day t2, in the audio channel CH1, musical piece B-2 is transmitted repeatedly, by the audio channel CH2, a musical piece C2 is transmitted repeatedly, and a musical piece K2 is hereafter transmitted repeatedly by the audio channel CH10 similarly. This is common to an MPEG audio channel and a 4X ATRAC audio channel.

[0046] That is, in drawing 4, what has a the same figure in () which is the channel program of an MPEG audio channel and a 4X ATRAC audio channel is related with the same musical piece. Moreover, the figure in () which is the channel program of voice additional information is voice additional information added to the audio data which have the same channel program. Furthermore, still picture data and text data which are transmitted as GUI data are also formed for every channel. As shown in drawing 5 (a) - (d), within the transport packet of MPEG 2, time-division multiplexing is carried out and it is transmitted, and these data are reconstructed using the header information of each data packet within IRD12, as shown in drawing 5 (e) - (h).

[0047] Here, the conceptual diagram of the transport stream itself transmitted is shown in drawing 6. As shown in this drawing, a transport stream is the set of a 188 byte fixed length's transport packet (TS packet). TS packet serves as a header and the adaptation field from a payload. Data, such as audio data, static-image data, and voice additional information, are stored in a payload. Moreover, the packet ID for distinguishing each stream and a section (Following PID is called) is stored in a header.

[0048] Data, such as audio data transmitted by such transport stream, image data, and voice additional information, are transmitted by the contents symbolic convention called MHEG-5. Here, it is transmitted as contents of MHEG-5 also about the script data which direct the display procedure of a GUI screen as shown in drawing 2 etc. Drawing 7 is drawing showing the transmission concept of the data of the MHEG format in this example, and data broadcast service here is altogether included in the root directory of the name called service gateway. As an object contained in the service gateway, there are classes, such as a directory, a file, a stream, and a stream event. The files of these are each data files, such as audio data, static-image data, and text data, the information which links a stream to other data services and AV streams is included, and, as for a stream event, the information and time information of a link are included. A directory is a folder which gathers the data relevant to mutual. These data consist of sets of some modules, and are transmitted.

[0049] A module is blocked for every predetermined unit and each block is changed into the format which gives a header and is called DBB (Download Data Block). On the other hand, in case a module is received by the receiving side, the control message called DII (Download Inform Indication) with the information about the magnitude of a required module etc. and the control message called DSI (Download Server Initiate) with the information for getting to know the whereabouts of the root

directory of data service by the receiving side are created. Three kinds of these messages, DBB, DII, and DSI, are sent out repeatedly periodically, and are transmitted by the cyclic structure called a karroo cel as shown in drawing 7, and it enables it to have received them by the receiving side always.

[0050] Next, the reception facility 3 of each home is explained.

[0051] As shown in drawing 1, as a reception facility of each home, a parabolic antenna 11, IRD12, a storage device 13, and a television receiver 14 are prepared. Here, as shown in drawing 8, record regenerative-apparatus 13A which used the magneto-optic disk called MD (mini disc) as a storage device as a record medium is used. Record regenerative-apparatus 13A of this example is used as the deck corresponding to connection by the bus line 16 of an IEEE1394 method, and explains the case where IRD12 and record regenerative-apparatus 13A are connected by the IEEE1394 bus line 16. And this record regenerative-apparatus 13A corresponding to IEEE1394 can accumulate the text data which contains that jacket data and words data with the audio data of the musical piece chosen by IRD12. In addition, in the connection which used the bus line 16 of an IEEE1394 method, it is possible to connect two or more sets of devices by the so-called link connection (to 64 sets), and it can connect with IRD12 by the bus line 16 of an IEEE1394 method also about a storage device at two or more set coincidence.

[0052] Drawing 9 shows an example of the configuration of IRD12. This IRD12 is equipped with an input terminal T1, the analog video outlet terminal T2, analog audio output terminal T3, the optical digital output interface 59, the IEEE1394 interface 60, the man machine interface 61, the IC card slot 62, the modem 63, and the infrared interface 66 as an external terminal or an interface.

[0053] An input terminal T1 is a terminal into which the input signal changed into the frequency predetermined by LNB25 is inputted. The analog video outlet terminal T2 is a terminal which supplies an analog video signal to a television receiver 14. Analog audio output terminal T3 is a terminal which supplies an analog audio signal to a television receiver 14, and analog audio output terminal T four is a terminal which supplies an analog audio signal to the storage device of an analog input. The optical digital output interface 59 sends out PCM audio data to a fiber optic cable (not shown) based on IEC958. The IEEE1394 interface 60 sends out a video data, audio data, various commands, etc. to the bus line of an IEEE1394 format. A man machine interface 61 sends the input data based on the infrared signal from the remote control equipment 64 by the user to CPU58 for control. IC card 65 is inserted in the IC card slot 62. A modem 63 is connected with the accounting server 5 through the telephone line 4. The infrared interface 66 is an interface for controlling a storage device by the infrared signal from CPU58 for control, and the infrared signal for storage device control is outputted from the infrared output section 67 connected to this infrared interface 66 through the predetermined signal line.

[0054] A tuner 51 chooses the signal of predetermined received frequency from the input signals supplied from a terminal T1 based on the setting signal from CPU58 for control, performs recovery and error correction processing further, and outputs an MPEG transport stream. A descrambler 52 receives an MPEG transport stream from a tuner 51, and descrambles the key data for descrambling memorized by IC card 65 using reception and this key data through the IC card slot 62 and CPU58 for control. Transport IC 53 extracts the desired MPEG video data and the MPEG audio data of a TV program for the command which the user inputted from remote control 64 out of reception and a transport stream through a man machine interface 61 and CPU58 for control. The MPEG video decoder 55 changes into the video data before a data compression the MPEG video data supplied from transport IC 53. The MPEG audio decoder 54 changes into the audio data before a data compression (PCM audio data) the MPEG audio data supplied from transport IC 53. DA converter 56 changes into an analog audio signal the audio data supplied from the MPEG audio decoder 54, and supplies them to analog audio output terminal T3.

[0055] CPU58 for control processes the IRD12 whole. In this case, the working-level month memory 58a and 58b is connected to CPU58 for control. Memory 58a is the memory which can rewrite data, and is accumulated in this memory 58a about MHEG data, voice additional information, etc. which make the screen for EPG etc. generate out of the transport stream which received with the tuner 51 and was extracted by transport IC 53. Memory 58b is the nonvolatile memory by which the program was set at the time of manufacture of IRD12, and various programs required to operate IRD12 make it have

memorized beforehand. As a program memorized by this memory 58b, it is started, for example based on MHEG data, and there is a resident program which performs processing which makes the screen for EPG generate, processing which controls the storage device connected to IRD12.

[0056] Moreover, a user receives the command inputted using remote control equipment 64 through a man machine interface 61 to CPU58 for control. Furthermore, the modem 63 is connected to CPU58 for control. Information required for accounting is memorized by IC card 65. The information on this IC card 65 is sent to the accounting server 5 (drawing 1) through the telephone line 4 using a modem 63.

[0057] And CPU58 for control forms the screen of a list page, the screen of the information page of each musical piece, or the screen data for EPG based on the data stored in memory 58a. Thus, the formed screen data are written in the predetermined area of the buffer memory in the MPEG video decoder 55. Thereby, as shown in drawing 2 , the screen of the list page of the musical piece broadcast or the information page of each musical piece or the screen for GUI can be displayed on the area of assignment on a screen.

[0058] Next, the actuation of IRD12 shown in drawing 9 is explained.

[0059] In IRD12 shown in drawing 9 , a user's selection of the channel of the music content distribution system explained until now displays a GUI screen as shown on the screen of a television receiver 14 at drawing 2 .

[0060] At this time, the input signal inputted into the terminal T1 is supplied to a tuner 51. By the tuner 51, based on the setting signal from CPU58 for control, the signal of predetermined received frequency is chosen from input signals, recovery and error correction processing are performed further, and an MPEG transport stream is outputted.

[0061] The output of a tuner 51 is supplied to a descrambler 52. In a descrambler 52, the key data for descrambling memorized are inputted into IC card 65 through the IC card slot 62 and CPU58 for control, and descrambling of an MPEG transport stream is performed using this key data. The MPEG transport stream which it descrambled is sent to transport IC 53.

[0062] In transport IC 53, the command which the user inputted from remote control equipment 64 is inputted through a man machine interface 61 and CPU58 for control. And according to the command, the desired MPEG video data and the MPEG audio data of a TV program are extracted out of a transport stream, and it is sent to the MPEG video decoder 55 and the MPEG audio decoder 54, respectively.

[0063] Separation processing of each data in transport IC 53 is performed by the demultiplexer which this transport IC 53 builds in. Drawing 10 is drawing showing the configuration of this demultiplexer, and is equipped with the PID filter 81 and the section data filter 82. The PID filter 81 judges PID (packet ID) of the transport stream packet inputted, separates audio data and image data, and supplies them to each decoder. Moreover, voice additional information is separated and it sends to the CPU58 side for control. The section data filter 82 separates desired section data, and sends it to the CPU58 side for control.

[0064] After the MPEG video data sent to the MPEG video decoder 55 is changed into the video data before a data compression here and then is changed into a composite video signal with the NTSC conversion block 57, it is outputted to a television receiver from the analog video outlet terminal T2. After the MPEG audio data sent to the MPEG audio decoder 54 are changed into the audio data before a data compression here and then are changed into an analog audio signal by DA converter 56, they are outputted to a television receiver from analog audio output terminal T3.

[0065] When a musical piece is chosen by list 21B of the musical piece on the GUI screen shown in drawing 2 and it tries listening the audio data of the musical piece, MPEG audio data are extracted from transport IC 53, and it is decoded by the MPEG audio decoder 54, and after a digital to analog is carried out by DA converter 56, it is outputted to a television receiver 14 (drawing 1) from analog audio output terminal T3.

[0066] Moreover, in case the download carbon button 28 is pushed on the GUI screen shown in drawing 2 and audio data are downloaded, audio data are extracted from transport IC 53, and audio data are outputted from any one of analog audio output terminal T3, the optical digital output interface 59, or the IEEE1394 interfaces 60.

[0067] That is, as shown in drawing 8, when record regenerative-apparatus 13A of IEEE1394 correspondence is connected to the IEEE1394 interface 60, 4X ATRAC data are extracted in transport IC 53, and it is sent out to record regenerative-apparatus 13A corresponding to IEEE1394 through the IEEE1394 interface 60. Moreover, at this time, the jacket data compressed by the JPEG method in transport IC 53 are extracted, and it is sent out to record regenerative-apparatus 13A corresponding to IEEE1394 through the IEEE1394 interface 60. Furthermore, at this time, text data, such as words and an artist's profile, are extracted in transport IC 53, and it is sent out to record regenerative-apparatus 13A corresponding to IEEE1394 through the IEEE1394 interface 60.

[0068] When the storage device (model which is not equipped with the IEEE1394 interface) is connected to the optical digital output interface 59, after MPEG audio data are extracted in transport IC 53 and decoded by the MPEG audio decoder 54, PCM audio data are sent out to a storage device through the optical digital output interface 59.

[0069] Drawing 11 is the block diagram showing an example of the configuration of record regenerative-apparatus 13A corresponding to IEEE1394. This record regenerative-apparatus 13A corresponding to IEEE1394 is equipped with the IEEE1394 interface 71, the optical digital input interface 72, the analog audio input terminal T12, and the analog audio output terminal T13. The IEEE1394 interface 71 is directly connected with the regeneration section 75. The optical digital input interface 72 is connected with the record playback section 75 through the ATRAC encoder 74. The analog audio input terminal T12 is connected to the ATRAC encoder 73 through A/D converter 73. And the analog audio output terminal T13 is connected with the record playback section 75 through D/A converter 78 and the ATRAC decoder 77. A disk (magneto-optic disk) 76 is set to the record playback section 75, and record playback is performed to this disk 76. In addition, although illustration was omitted here, CPU for control which performs control of this whole record regenerative-apparatus 13A corresponding to IEEE1394 etc., and the man machine interface are prepared.

[0070] Next, the actuation at the time of record of this record regenerative-apparatus 13A corresponding to IEEE1394 is explained.

[0071] When the IEEE1394 interface 60 of IRD12 shown in the IEEE1394 interface 71 and drawing 9 is connected, still picture data, such as text data, such as audio data of a musical piece sent out from the IEEE1394 interface 60 and words, and a jacket, are inputted from the IEEE1394 interface 71, and are recorded on a disk 76 by the record playback section 75 as they are. On a disk 76, each data is recorded by extended MD format at this time so that it may explain later. Moreover, also about the copyright information on each data, it is inputted from the IEEE1394 interface 71 and recorded on the corresponding table-of-contents information (TOC) area so that it may mention later.

[0072] When PCM audio data are inputted into the optical digital input interface 72 from the exterior, after the inputted PCM audio data are encoded with the ATRAC encoder 74, they are recorded on a disk 76 by the record playback section 75.

[0073] When an analog audio signal is inputted into the analog audio input terminal T12 from the exterior, analog-to-digital conversion of the inputted analog audio signal is carried out by AD converter 73, and after being encoded with the ATRAC encoder 74, it is recorded on a disk 76 by the record playback section 75.

[0074] That is, in this record regenerative-apparatus 13A corresponding to IEEE1394, only when between IRD(s)12 is connected with the IEEE1394 interface, that words data and still picture data of a jacket are recorded with the audio data of a musical piece, and, in connection with an optical digital interface, or analog audio connection, only audio data are recorded.

[0075] At the time of playback, a regenerative signal can be outputted from the IEEE1394 interface 71 or the analog audio output terminal T13. And while it is possible to output musical piece data to the audio equipment (amplifier etc.) of IEEE1394 correspondence when outputting from the IEEE1394 interface 71, and the words data and jacket data are recorded on the disk 76 with the audio data of a musical piece, it is possible to express words data and jacket data as the display of IEEE1394 correspondence, or to print by the printer of IEEE1394 correspondence.

[0076] Thus, in the record regenerative apparatus corresponding to IEEE1394 which applied this

invention, record playback of the words data and jacket data is possible with the audio data of a musical piece.

[0077] This record playback is attained by using the extended MD format shown in drawing 12. As shown in this drawing, the audio data of a musical piece are recorded on the Main data area by the ATRAC method. This is the same as the present MD format. While table-of-contents information, such as a record location of each music, is recorded on the table-of-contents information (User Table Of Contents) area of the audio data with which ATRAC audio data were recorded on the main data (Main Data) area for a maximum of 74 minutes, and were recorded on it by the main data, auxiliary table-of-contents information, such as prohibition information on the copy of each music, is recorded. And in an extended MD format, jacket data (static-image data), words data (text data), etc. which were mentioned above in 2.8 more M bytes of auxiliary-data (Aux Data) area are recorded. The table-of-contents information on the data recorded on this auxiliary data area is recorded on auxiliary table-of-contents information (Aux TOC) area. At this time, auxiliary table-of-contents information, such as prohibition information on a copy, is recorded on auxiliary table-of-contents information area also about each static-image data and text data. By using this format, record playback of jacket data or the words data can be carried out with the audio data of a musical piece. Moreover, compatibility with the present MD format is maintainable.

[0078] Next, in the reception facility shown in drawing 9, the processing at the time of downloading the ATRAC audio data of the musical piece which is a music program, jacket data, words data which are voice additional information, etc. is explained with reference to the flow chart of drawing 13.

[0079] First, a user chooses the channel of the music broadcast which enabled download of the musical piece data explained the channel of EMD (Electric Music Download), i.e., until now, in IRD12 (step 101). The selection command of a channel is given for the remote control equipment 64 shown in drawing 9, specifically looking at the EPG screen currently displayed on the television receiver 14. In IRD12, through a man machine interface 61, CPU58 for control sends a channel setting signal to reception and a tuner 51, and sets a user's channel selection command as a desired channel.

[0080] Selection of this channel judges whether CPU58 for control has MHEG data which make a GUI screen (list screen) form in this selected channel with reference to the section data called PMT (Program MapTable) (step 102). Here, when there are no MHEG data for GUI screens, it judges that it is not the channel which performs download processing of this example, and processing is ended. When the channel to which the ATRAC audio mentioned above is sent out is chosen, there are MHEG data for EPG screens, and CPU58 for control starts the program (resident program) which interprets the MHEG data beforehand prepared for working-level month memory 58b, and interprets the received MHEG data (step 103).

[0081] And CPU58 for control makes the image data of an EPG screen create, and supplies that image data to a decoder 55, and it is made to display on the screen of the television receiver 14 connected to IRD12 based on this interpreted MHEG data (step 104). The GUI screen displayed at this time is a screen shown in drawing 2. Here, CPU58 for control stands by until selection actuation and the selected download actuation of music of the music displayed all over this screen are performed by the key stroke of remote control equipment 64 (step 105). If there is supply of the remote control signal corresponding to actuation in which the part 28 displayed as download is depressed, the get device program within the resident program beforehand prepared for memory 58b will be made to be started, the device ID of storage device 13A connected by the bus line of an IEEE1394 method by this get device program will be acquired, and processing passed to the executive operation section of MHEG data will be performed (step 106). The device ID here is the identification code beforehand given to connection with the predetermined number of bits (here 64 bits) by the bus line of an IEEE1394 method. The code of the manufacture manufacturer of a device, the classification code of the model of device, the serial code of a device, etc. are set up in the array by predetermined specification, and a class, a function, etc. of a model which were connected by distinguishing Device ID by the program by which it was prepared for memory 58b are known by CPU58 for control.

[0082] When the device ID of a storage device to which CPU58 for control was connected is acquired,

based on the device ID, the image data for the list display of the device connected to IRD12 is created, the image data is supplied to a decoder 55, and it is made to display on the screen of the television receiver 14 connected to IRD12 (step 107). Here, CPU58 for control stands by until selection actuation of the device displayed all over this screen is performed by the key stroke of remote control equipment 64 (step 108). It stands by until the ATRAC data of music with which download was directed at step 105 when there was supply of the remote control signal corresponding to selection actuation of this device are received, and if it becomes the timing received, text data, such as static-image data (JPEG data), such as ATRAC data of that music and jacket data of this music, and words, are sent out to the selected device (storage device) from the IEEE1394 interface 60 at a bus line 16.

[0083] At this time, the node ID set as the selected device as the transmission place address is given to the data sent out from the IEEE1394 interface 60. Moreover, an isochronous transfer (synchronous transmission) is performed about the ATRAC data which are audio data of music, and an asynchronous transfer (asynchronous transmission) is performed about JPEG data or text data. It is made to transmit by asynchronous transfer also about the control data which performs processing on which the ATRAC data transmitted are made to record by the device of a transmission place. Thus, the data sent out to the bus line 16 by being processed are recorded in the condition which shows in the connected device and the disk with which record regenerative-apparatus 13A of IEEE1394 correspondence was loaded here at drawing 12.

[0084] And when it judges that CPU58 for control judged whether download of all the data about the music chosen by the bus line 16 of this IEEE1394 was completed (step 110), and was completed, and it judges whether there are any download directions of another music (step 111) and there are download directions of another music, it returns to step 109 and download processing of that music is performed. When it judges that download processing of all the music chosen at step 111 was completed, processing concerning download in processing is ended. In addition, predetermined accounting is performed, when download of this ATRAC audio data etc. is performed and this data is charged data (here, it omits about the detail of accounting).

[0085] By processing being performed, thus, the device as a storage device which can perform record of ATRAC audio data When connecting with IRD12 through the bus line of an IEEE1394 format It is based on the MHEG data transmitted from the side to which ATRAC audio data etc. are sent out. The processing which creates the list of connected devices is started, it performs by the resident program beforehand prepared in IRD12, a list is displayed, and the device which downloads ATRAC audio data etc. can choose the processing itself easily. Therefore, although a list display will be made by IRD12 with the MHEG data seemingly transmitted from a sending area, the detail of the processing which acquires Device ID in fact is performed by the resident program prepared for IRD12, and acquisition processing of the suitable device ID based on the actual configuration of IRD12 is performed. Especially, in the bus line of an IEEE1394 format, since very many devices (for example, 64 sets) are connectable, selection processing when two or more sets of devices are connected to IRD12 by the bus line can carry out efficiently based on a list display.

[0086] Next, download processing of the information about the copyright performed in case the ATRAC audio data received by IRD12 in this way are downloaded is explained with reference to the flow chart of drawing 14. Download processing of the information about this copyright is performed at the time of the download processing to the selected device in step 109 shown in the flow chart of drawing 13.

[0087] First, if an MHEG channel is chosen as a channel received and chosen with a tuner 51 (step 141), PMT (programmed map table) of the channel will be acquired (step 142). The MHEG data which have considered as the configuration to which the data by which block structuring was carried out are periodically transmitted repeatedly by the karroo cellular structure, detect PID (packet ID) of the control message called DSI by the transport IC 53 in IRD12, and correspond here as drawing 7 explained the MHEG channel download to the CPU58 side for control, and the program directed by MHEG data by the CPU58 side for control starts (step 143).

[0088] And CPU58 for control sets PID of DSI to the demultiplexer 80 (refer to drawing 10) in transport IC 53, and CPU58 for control acquires the data of DSI (step 144). CPU58 for control analyzes

the data of this acquired DSI, and PID of DII with root information is acquired (step 145). And CPU58 for control sets PID of DII to the demultiplexer 80 in transport IC 53, and CPU58 for control acquires the data of DII (step 146). And the file of the directory of the low order transmitted is read based on the data of DSI, and the data of DII (step 147). CPU58 for control is judged [whether the desired data to need were acquirable with this read data and] (step 148). The data here to need are the copyright information on each data (audio data, static-image data, text data) which constitutes the music download was instructed to be from processing of the flow chart of drawing 13. When this copyright information cannot be read, it returns to step 146 and read-out processing of data is performed again.

[0089] When the copyright information on each data is able to be read at step 148, the copyright information read by each data (audio data, static-image data, text data) at step 147 according to the individual is given, and is transmitted to the selected storage device (here disk record regenerative-apparatus 13A) through the bus line of an IEEE1394 format (step 149). At the disk record regenerative-apparatus 13A side to which these data are transmitted through a bus line, each data is recorded in the extended MD format shown, for example in drawing 12 (step 150). That is, the ATRAC audio data of each music are recorded on the main data area in an extended MD format, the copy information based on copyright information is recorded on table-of-contents information area with information, such as time amount of each of that music, static-image data and text data of each music are recorded on an auxiliary data area, and the copy information based on copyright information is recorded on auxiliary table-of-contents area with the table-of-contents information about the static-image data and text data.

[0090] In being the information which forbids a digital copy as copyright information transmitted, for example as correspondence with the copyright information sent from a sending area, and the copy information recorded on a record medium (digital), it considers as the code of the ban on a digital copy as copy information recorded corresponding to the data. Moreover, in being the information which only a predetermined count (for example, 1 time) permits a digital copy as copyright information transmitted, let a digital copy be the code permitted only once as copy information recorded corresponding to the data. Moreover, in being the information which does not restrict a digital copy as copyright information transmitted, it considers as the code which does not restrict a digital copy as copy information recorded corresponding to the data.

[0091] In addition, when these processings are performed when IRD12 is set as the condition that accounting can be carried out correctly, and not being set up so that accounting can be carried out, transmission of the audio data from IRD12 to a recording apparatus side etc. is not performed.

[0092] Moreover, it controls in the download processing shown in the flow chart of drawing 13 not to perform the output from the IEEE1394 interface 60 of the data (the data with which a copy is restricted) which have copyright in it when CPU58 for control distinguishes from Device ID that it is the recording apparatus which the recording apparatus which performs download chosen at step 108 records on the record medium of the format without a digital copy limit processing facility. For example, like the hard disk record regenerative apparatus with which personal computer equipment is equipped as a recording apparatus to download, after recording on the record medium, when it is equipment which can perform the digital copy to other record media freely fundamentally, control which does not transmit the data of the music which has copyright in the record regenerative apparatus is performed. In record regenerative-apparatus 13A of MD (mini disc) mentioned above, it is a format of MD, and since it has considered as the configuration which performs digital copy limit processing between other recording apparatus connected with the regenerative apparatus which treats this MD based on the copy information recorded on table-of-contents information proper, it is possible to keep copyright.

[0093] Thus, in case download to the storage device connected to IRD is performed based on the copyright information sent from a sending area, it is made to download also about the copyright information, and proper record processing which kept copyright is performed by having recorded the data based on copyright information on the record medium with the data of a musical piece. Especially in this example, as jacket data which accompany the audio data of each music, also about static-image data and text data, such as words Copyright information is transmitted according to an individual and it is based on the copyright information according to the individual. Also about each static-image data and

text data The data based on copyright information are recorded and each record copy-of-data limit processing can be processed proper based on the copyright which each data has.

[0094] In addition, although the gestalt of operation mentioned above explained the processing at the time of downloading to the storage device which used the record medium called MD (mini disc) in the audio data called an ATRAC audio The audio data obtained from the other exteriors, image data, electronic mail data, the various contents data of the Internet, etc. In case the connected storage device is made to download and it is made to record, it can apply also to the processing at the time of making the copyright information transmitted to coincidence from the sending area of the data record.

[0095] Moreover, although the digital satellite broadcasting relayed with a satellite was applied as a transmission line of a before [from sending areas such as audio data, / a reception facility], the transmission line for other broadcasts may be applied. For example, the optical cable or coaxial cable called cable television is used, and ATRAC audio data etc. are transmitted by the predetermined channel of the transmission line which carried out direct continuation of between a sending area and reception facilities with the cable, and it is a reception facility side and may be made to perform same download. Moreover, the transmission line of others, such as the telephone line, may be used.

[0096] Moreover, between the devices connected to a storage device and its storage device, although it connected by the bus line of an IEEE1394 format, of course, you may connect by the data transmission line of other formats.

[0097]

[Effect of the Invention] According to the data reception / record approach indicated to claim 1, it becomes possible to operate effectively duplicate protection processing of received data in which copyright information was recorded on the record medium with data, and was recorded on the record medium, based on the copyright information recorded on predetermined area.

[0098] In invention which was indicated to claim 1 according to the data reception / record approach indicated to claim 2 data Consist of audio data of a musical piece, words data of a musical piece, and image data relevant to a musical piece, and the copyright information given to each of audio data, words data, and image data is received. While recording each data on a record medium, each copyright information by having made it record on predetermined area Each duplicate protection processing of audio data, words data, and image data can be effectively operated based on each copyright information recorded on the record medium.

[0099] When duplicate prohibition processing is the medium of a format which does not function effectively as a prepared record medium in invention indicated to claim 1 according to the data reception / record approach indicated to claim 3, the record processing from which copyright may not be protected is not performed, but can keep copyright by forbidding record of the received data.

[0100] According to the data sink indicated to claim 4, it becomes possible to transmit copyright information to a recording apparatus with data, to become possible to record copyright information with data by the recording apparatus side, and to operate duplicate protection processing of the received data effectively based on copyright information. [0101] According to the data sink indicated to claim 5, in invention indicated to claim 4, the data which a receiving means receives The audio data of a musical piece, the words data of a musical piece, and the image data relevant to a musical piece are contained, and a distinction means distinguishes the copyright information given to each data. A transmission means By transmitting the copyright information distinguished according to the individual to each data transmitted to a recording apparatus as accompanying information, each duplicate protection processing of audio data, words data, and image data can be effectively performed based on each copyright information.

[0102] In invention which was indicated to claim 4 according to the data sink indicated to claim 6 By the distinction means having distinguished the recording device connected to the transmission means, and having had the transmission control means for which transmission to a recording device from a transmission means is forbidden, when duplicate prohibition processing was the recording device of a format which does not function effectively Record processing from which copyright may not be protected is not performed, but can keep copyright.

[Translation done.]

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1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

CLAIMS

[Claim(s)]

[Claim 1] The data reception / record approach which recorded the above-mentioned copyright information on the predetermined area of the above-mentioned record medium when receiving the data encoded by the predetermined method, and the copyright information incidental to these data and making the received above-mentioned data record on a predetermined record medium.

[Claim 2] In the data reception / record approach according to claim 1 the above-mentioned data Consist of audio data of a musical piece, words data of the above-mentioned musical piece, and image data relevant to the above-mentioned musical piece, and the copyright information given to each of the above-mentioned audio data, the above-mentioned words data, and the above-mentioned image data is received. The data reception / record approach which recorded each copyright information on the above-mentioned predetermined area while recording each data on the above-mentioned record medium.

[Claim 3] The data reception / record approach of forbidding record of the received data when duplicate prohibition processing is the medium of a format which does not function effectively as the prepared above-mentioned record medium in the data reception / record approach according to claim 1.

[Claim 4] The data sink had a transmission means transmit to the above-mentioned recording apparatus considering the copyright information which distinguished with the above-mentioned distinction means as information which accompanies the above-mentioned data while transmitting the data which received with a receiving means receive the data with which copyright information is multiplexed and distributed, a distinction means distinguish the copyright information received with the above-mentioned receiving means, and the above-mentioned receiving means to a predetermined recording apparatus.

[Claim 5] In a data sink according to claim 4, the data which the above-mentioned receiving means receives The audio data of a musical piece, the words data of the above-mentioned musical piece, and the image data relevant to the above-mentioned musical piece are contained. The above-mentioned distinction means The copyright information independently given to each of the above-mentioned audio data, the above-mentioned words data, and the above-mentioned image data is distinguished. The above-mentioned transmission means The data sink which transmits the copyright information which the above-mentioned distinction means distinguished as accompanying information to each data transmitted to the above-mentioned recording apparatus.

[Claim 6] The data sink which the above-mentioned distinction means distinguished the above-mentioned recording device connected to the above-mentioned transmission means in the data sink according to claim 4, and was equipped with the transmission control means for which transmission to the above-mentioned recording device from the above-mentioned transmission means is forbidden when duplicate prohibition processing was the recording device of a format which does not function effectively.

[Translation done.]